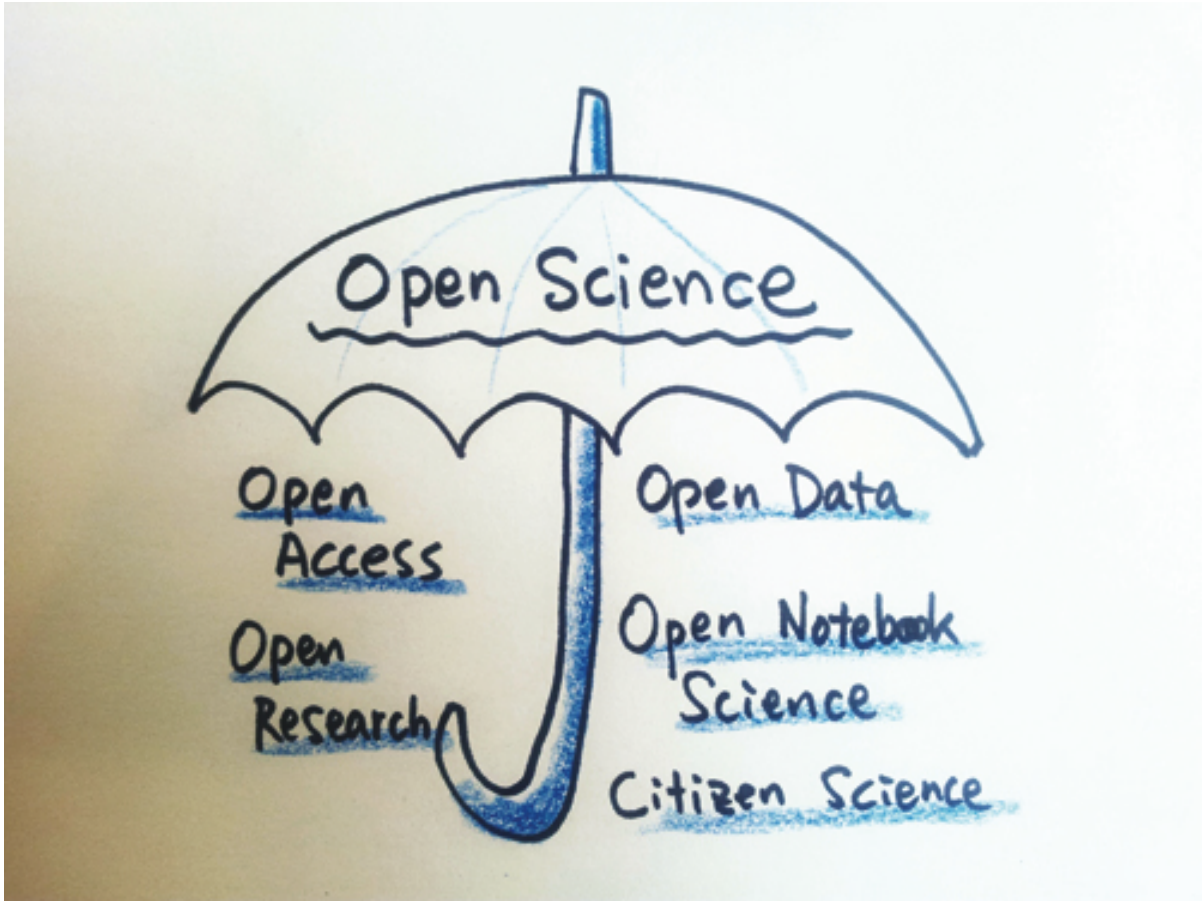
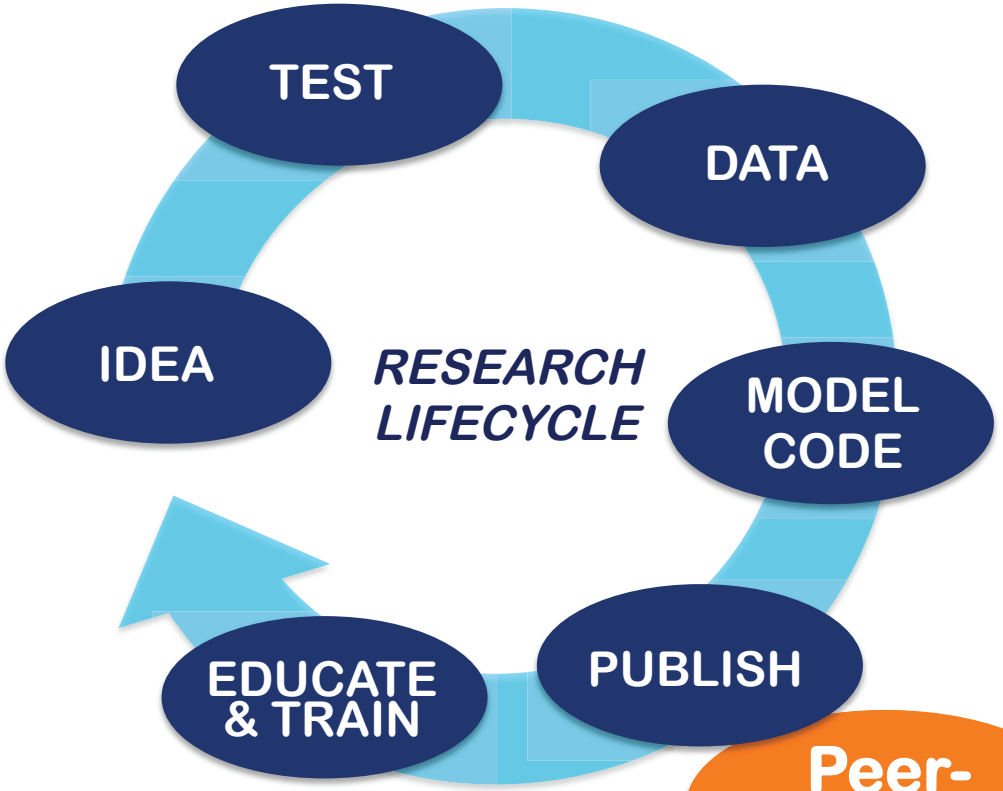
Winning Horizon 2020 with Open Science

Ivo Grigorov, Mikael Elbaek, Najla Rettberg, Joy Davidson, Martin Donnelly

Based on: Winning Horizon 2020 with Open Science, http://dx.doi.org/10.5281/zenodo.12247


Open Science
Open Access
Open Research
Open Data
Open Notebook Science
Citizen Science



Impact Factor (IF)

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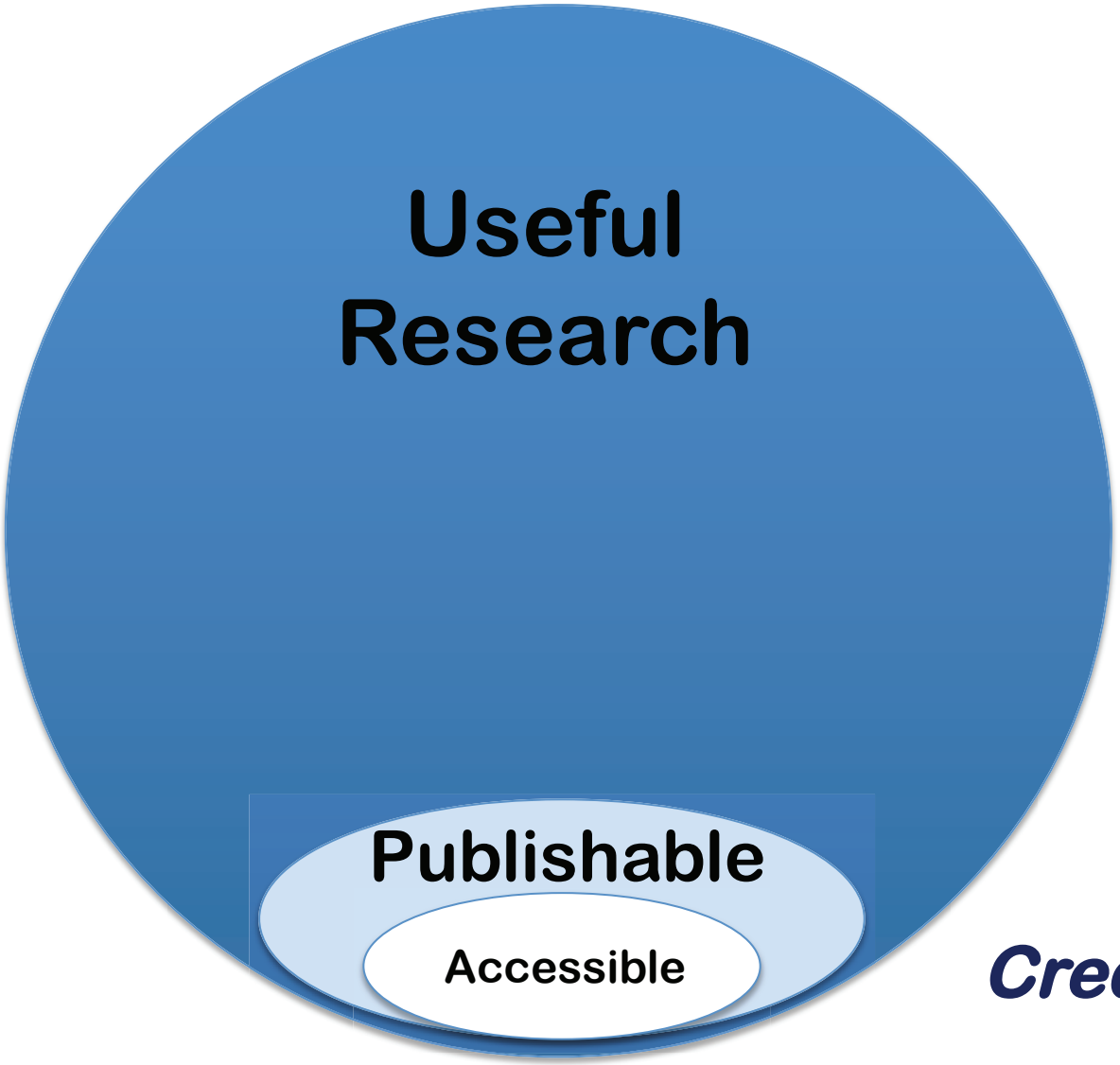
"Research Cycle" adapted from Tenopir et al., (2011) doi:10.1371/journal.pone.0021101
http://www.plosone.org/article/info:doi/10.1371/journal.pone.0021101


@ fosterscience
"Focus on Impact (Factor) distorts what matters in science"
Dr. Alan Leshner,
CEO AAAS & Publisher of "Science" journal
#esof2014 pic.twitter.com/M9D0rVtggI
24/06/2014 16:53



Credibilty?

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Source: michaelnielsen.org

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« 60% of UCL-published research was easily accessible »

Source: Paul Ayres, Senior Manager University College London, Library & Infomation Services (pers. comm.)

2002

2011

« around 50% of scientific papers published in 2011 now available for free »

Source: Proportion of Open Access Peer-Reviewed Papers in 2004-2011, Science Metrix Aug 2013, EC Commissioned Study http://europa.eu/rapid/press-release_IP-13-786_en.htm

… and the rest ?

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”If we wait 5 years for (Arctic) data to be released, the Arctic is going to be a very different place”

Bryn Nelson, Nature 10 Sept 2009

http://www.nature.com/nature/journal/v461/n7261/index.html

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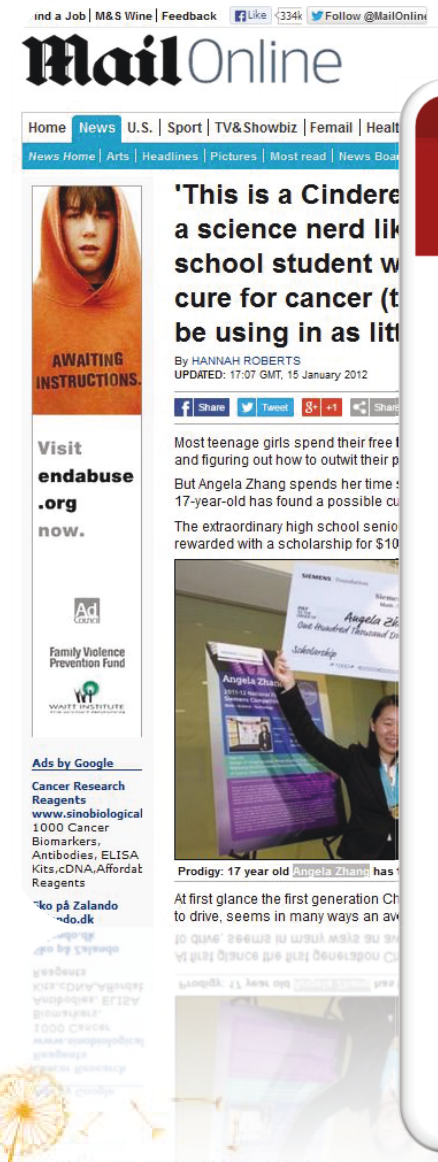
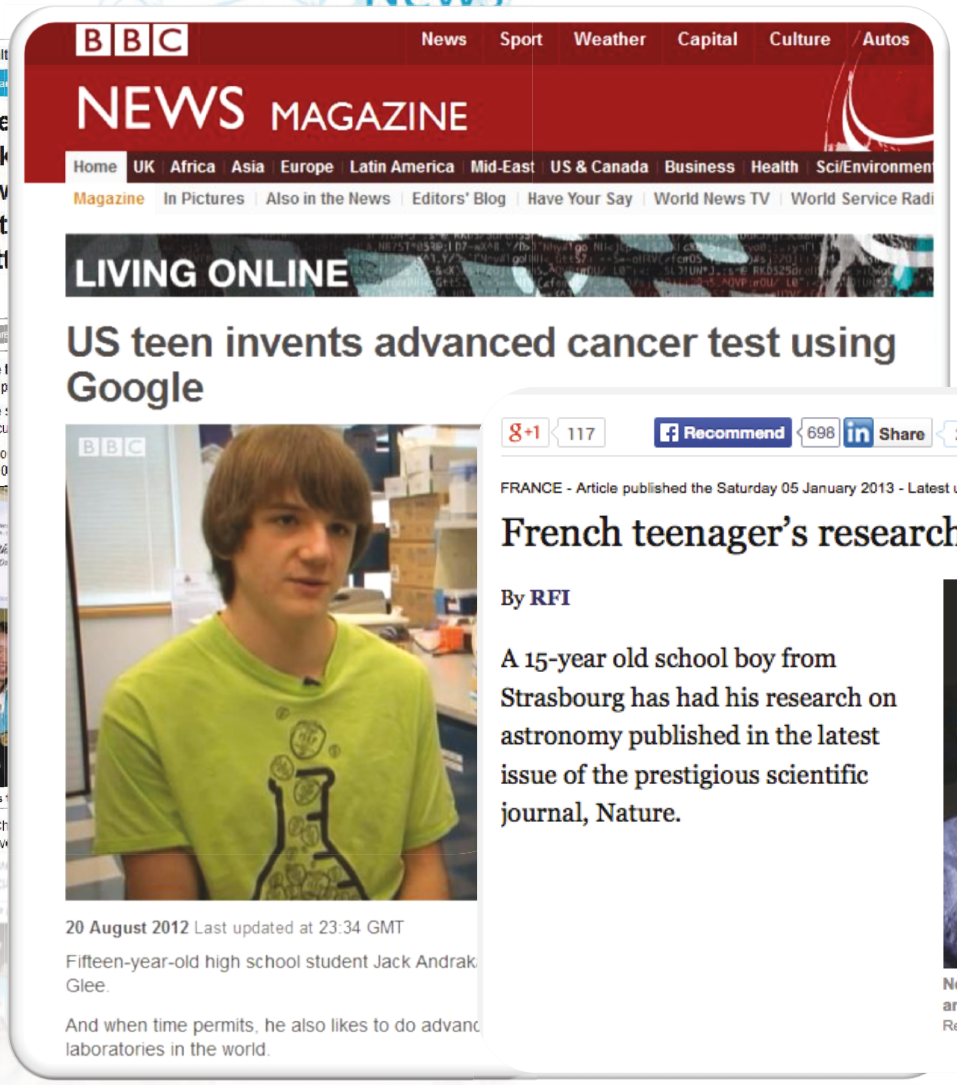
Open Science can Multiply Serendipity in research …





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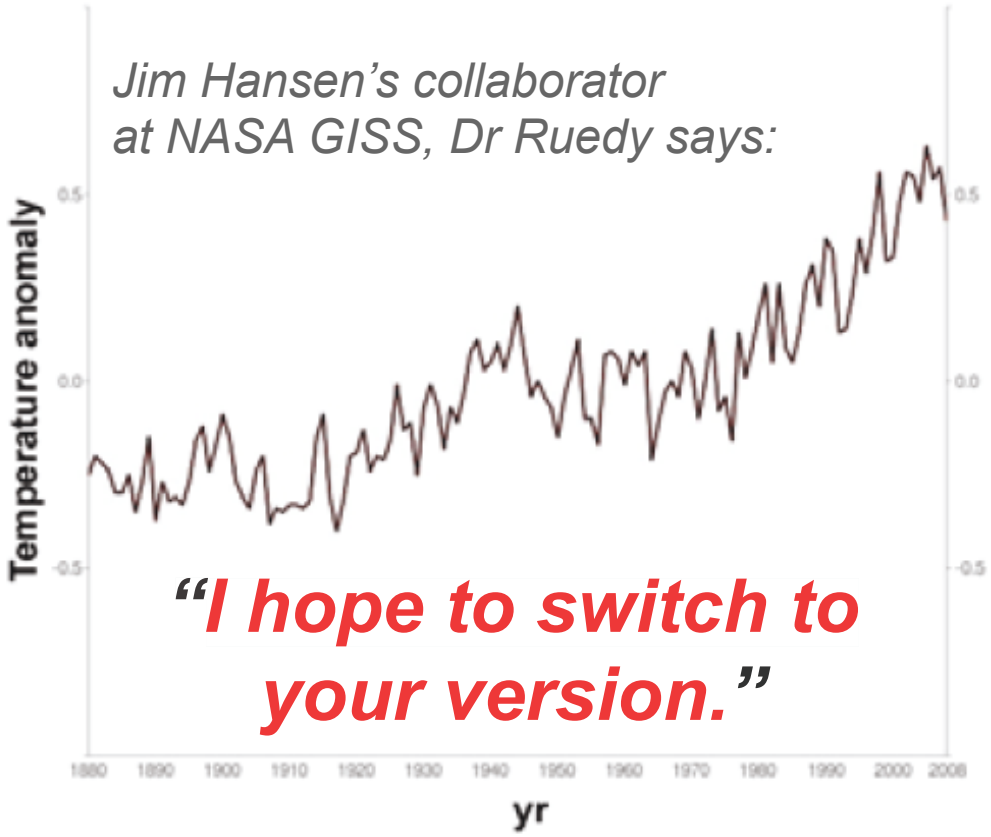
Source: Grigorov 2011, "Should Citizen Scientists play with Climate & Ecosystem Moldes?", European Geoscience Union Newsletter

Jim Hansen's collaborator at NASA GISS, Dr Ruedy says:



"I hope to switch to your version."

Figure 1. Global annual temperature anomaly. Without an offset, the CCC-version (red) replicates GISS original output (black) so well that it is barely visible. For full GISTEMP-CCC comparison, visit http://clearclimatecode.org/category/status/

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Why Open Science ?

- ✓ *greater visibility and impact for authors & projects*
- ✓ *makes research networked & interconnected*
- ✓ *networked research generates serendipity by default*
- ✓ *Speeds up innovation & discovery, takes ideas to the market & solutions to societal challenges*
- ✓ *Directly contributes to ECONOMIC GROWTH !!!*

REPRODUCIBILITY !!!

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What is the Horizon 2020 mandate?

Grant Agreement Article 29.1-6

Based on: Winning Horizon 2020 with Open Science, http://dx.doi.org/10.5281/zenodo.12247

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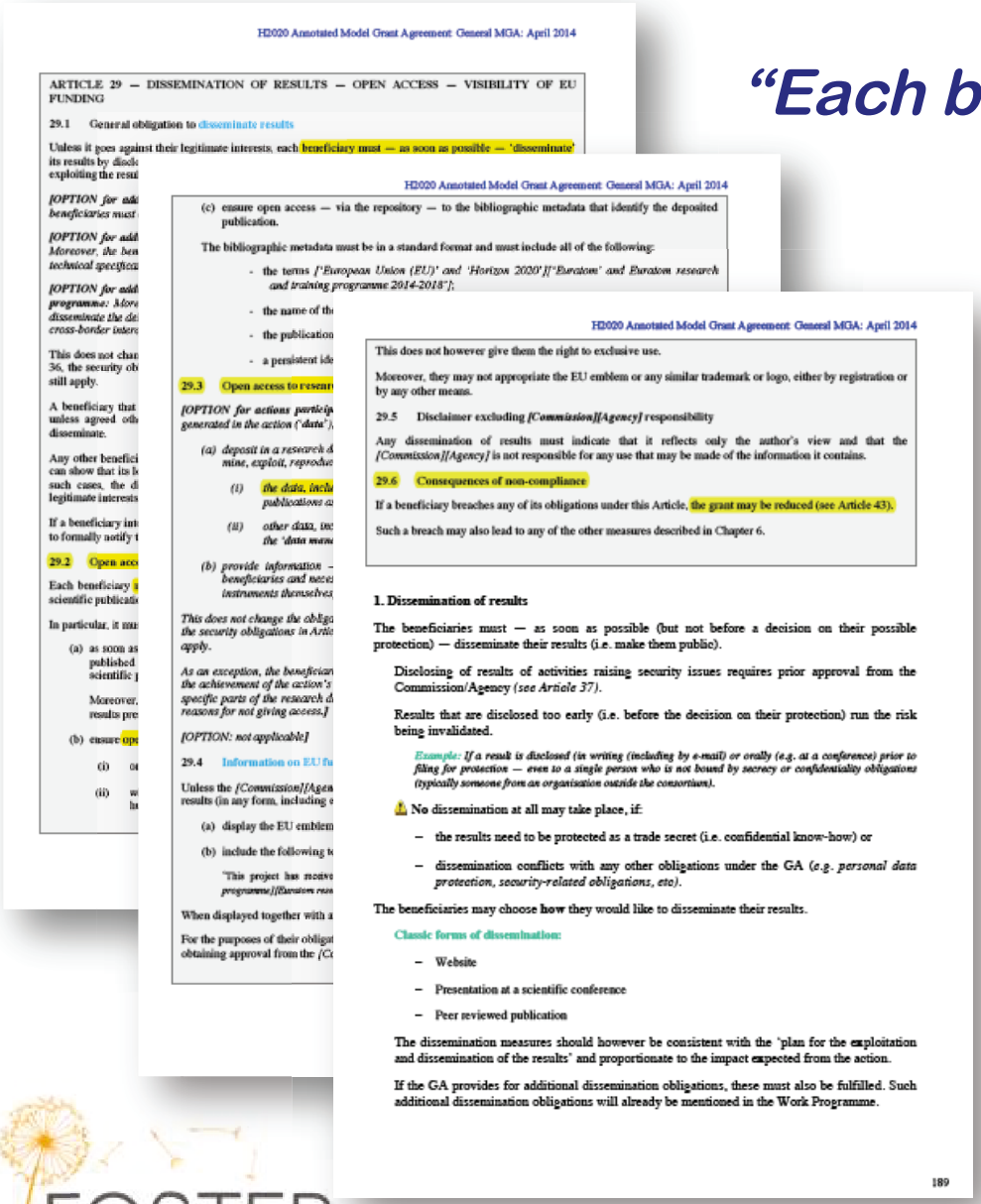
Grant Agreement Article 29.1– 6



H2020 Annotated Model Grant Agreement: General MGA: April 2014

ARTICLE 29 — DISSEMINATION OF RESULTS — OPEN ACCESS — VISIBILITY OF EU FUNDING

29.1 General obligation to disseminate results

Unless it goes against their legitimate interests, each beneficiary must — as soon as possible — 'disseminate'

H2020 Annotated Model Grant Agreement: General MGA: April 2014

(c) ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

The bibliographic metadata must be in a standard format and must include all of the following:

- the terms *['European Union (EU)' and 'Horizon 2020'][''Euratom' and Euratom research and training programme 2014-2018'];*
- the name of th
- the publication
- a persistent ide

29.3 Open access to

[OPTION for actions partici

(a) *deposit in a research*

(i) *the data, inclu*

(ii) *other data, inc*

(b) *provide information*

This does not change the oblig

As an exception, the beneficiar

specific parts of the research d

[OPTION: not applicable]

29.4 Information on EU fu

Unless the *[Commission][Agen*

(a) display the EU emblem

(b) include the following

"This project has receive

When displayed together with a

For the purposes of their obligat

H2020 Annotated Model Grant Agreement: General MGA: April 2014

This does not however give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

29.5 Disclaimer excluding *[Commission][Agency]* responsibility

Any dissemination of results must indicate that it reflects only the author's view and that the *[Commission][Agency]* is not responsible for any use that may be made of the information it contains.

29.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

1. Dissemination of results

The beneficiaries must — as soon as possible (but not before a decision on their possible protection) — disseminate their results (i.e. make them public).

Disclosing of results of activities raising security issues requires prior approval from the Commission/Agency *(see Article 37).*

Results that are disclosed too early (i.e. before the decision on their protection) run the risk being invalidated.

Example: If a result is disclosed (in writing (including by e-mail) or orally (e.g. at a conference) prior to filing for protection — even to a single person who is not bound by secrecy or confidentiality obligations (typically someone from an organisation outside the consortium).

⚠ No dissemination at all may take place, if:

- the results need to be protected as a trade secret (i.e. confidential know-how) or
- dissemination conflicts with any other obligations under the GA (*e.g. personal data protection, security-related obligations, etc).*

The beneficiaries may choose how they would like to disseminate their results.

Classic forms of dissemination:

- Website
- Presentation at a scientific conference
- Peer reviewed publication

The dissemination measures should however be consistent with the 'plan for the exploitation and dissemination of the results' and proportionate to the impact expected from the action.

If the GA provides for additional dissemination obligations, these must also be fulfilled. Such additional dissemination obligations will already be mentioned in the Work Programme.

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"Each beneficiary must ensure open access to all peer-reviewed scientific publications"

"deposit research data … to make it possible for third parties to access, mine, exploit, reproduce and disseminate, free of charge"

Source: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

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www.fosteropenscience.eu

Source: www.wordle.net

Winning Horizon 2020 with Open Science?

Dealing with the proposal template

1. **Excellence:**
   - Objectives
   - Relevance to WorkProgram
   - Concept & Approach
   - Ambition

   min 3/5 POINTS

2. **Impact:**
   - Expected impact to WorkProgram
   - Maximise Impact (Open Access & Open Data)

   min 3/5 POINTS

3. **Implementation:**
   - Workplan & Management
   - Consortium & Resources

   min 3/5 POINTS

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Source: Winning Horizon 2020 with Open Science, 10.5281/zenodo.12247

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Winning Horizon 2020 with Open Science?

Dealing with the proposal template

2. IMPACT (min 3/5 points):

2.1 Expected impact to WorkProgram

- *expected impacts set out in the work programme*
- *delivering innovations to the markets*
- *socially important impacts*

2.2 Maximise Impact (Open Access & Open Data)

- *plan for results dissemination and exploitation*
- *research data management for verification & re-use*
- *knowledge strategy management & Open Access*

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Source: Winning Horizon 2020 with Open Science, 10.5281/zenodo.12247

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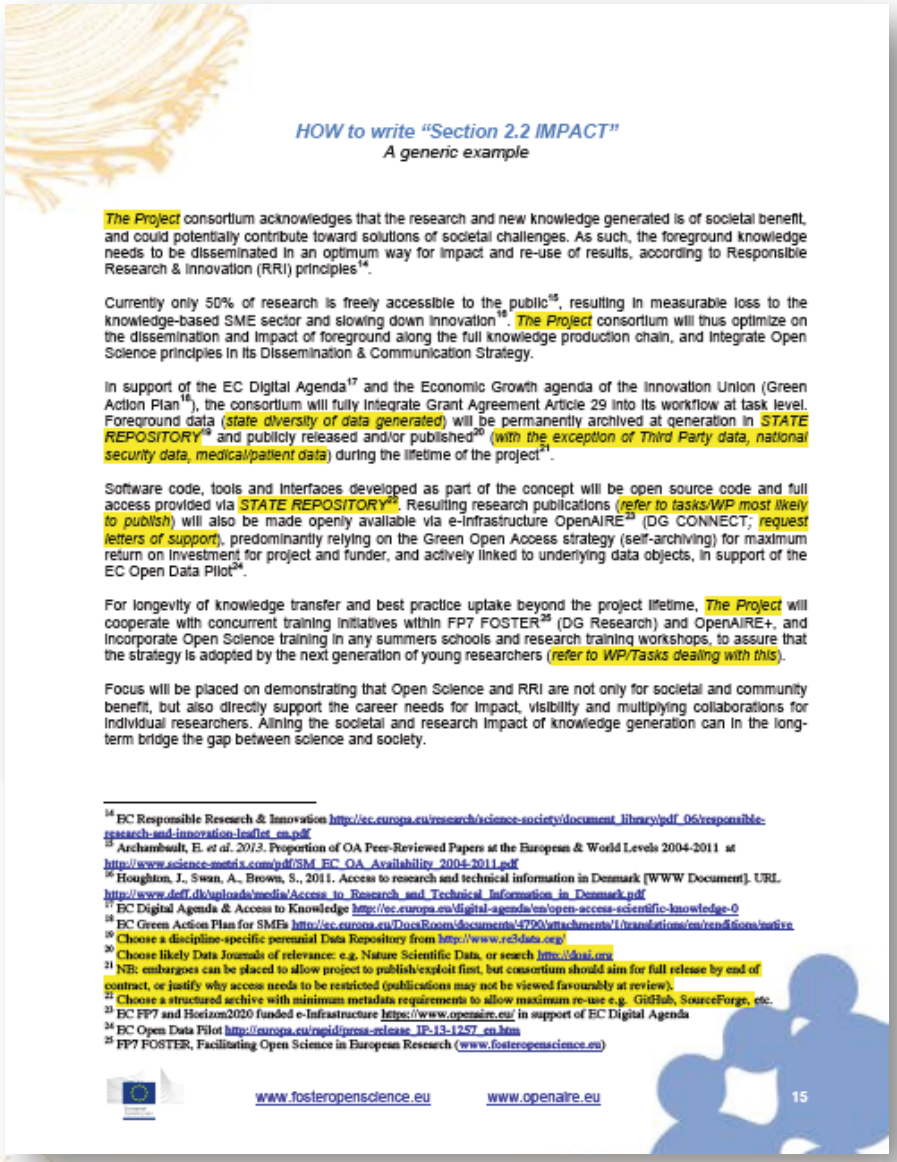

HOW to write "Section 2.2 IMPACT"
A generic example

The Project consortium acknowledges that the research and new knowledge generated is of societal benefit, and could potentially contribute toward solutions of societal challenges. As such, the foreground knowledge needs to be disseminated in an optimum way for impact and re-use of results, according to Responsible Research & Innovation (RRI) principles[14].

Currently only 50% of research is freely accessible to the public[15], resulting in measurable loss to the knowledge-based SME sector and slowing down innovation[16]. *The Project* consortium will thus optimize on the dissemination and impact of foreground along the full knowledge production chain, and integrate Open Science principles in its Dissemination & Communication Strategy.

In support of the EC Digital Agenda[17] and the Economic Growth agenda of the Innovation Union (Green Action Plan[18]), the consortium will fully integrate Grant Agreement Article 29 into its workflow at task level. Foreground data (*state diversity of data generated*) will be permanently archived at generation in *STATE REPOSITORY*[19] and publicly released and/or published[20] (*with the exception of Third Party data, national security data, medical/patient data*) during the lifetime of the project[21].

Software code, tools and interfaces developed as part of the concept will be open source code and full access provided via *STATE REPOSITORY*[22]. Resulting research publications (*refer to tasks/WP most likely to publish*) will also be made openly available via e-Infrastructure OpenAIRE[23] (DG CONNECT; *request letters of support*), predominantly relying on the Green Open Access strategy (self-archiving) for maximum return on investment for project and funder, and actively linked to underlying data objects, in support of the EC Open Data Pilot[24].

For longevity of knowledge transfer and best practice uptake beyond the project lifetime, *The Project* will cooperate with concurrent training initiatives within FP7 FOSTER[25] (DG Research) and OpenAIRE+, and incorporate Open Science training in any summers schools and research training workshops, to assure that the strategy is adopted by the next generation of young researchers (*refer to WP/Tasks dealing with this*).

Focus will be placed on demonstrating that Open Science and RRI are not only for societal and community benefit, but also directly support the career needs for impact, visibility and multiplying collaborations for individual researchers. Aiming the societal and research impact of knowledge generation can in the long-term bridge the gap between science and society.

[14] EC Responsible Research & Innovation http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf
[15] Archambault, E. *et al. 2013*. Proportion of OA Peer-Reviewed Papers at the European & World Levels 2004-2011 at http://www.science-metrix.com/pdf/SM_EC_OA_Availability_2004-2011.pdf
[16] Houghton, J., Swan, A., Brown, S., 2011. Access to research and technical information in Denmark [WWW Document]. URL http://www.deff.dk/uploads/media/Access_to_Research_and_Technical_Information_in_Denmark.pdf
[17] EC Digital Agenda & Access to Knowledge http://ec.europa.eu/digital-agenda/en/open-access-scientific-knowledge-0
[18] EC Green Action Plan for SMEs http://ec.europa.eu/DocsRoom/documents/4790/attachments/1/translations/en/renditions/native
[19] Choose a discipline-specific perennial Data Repository from http://www.re3data.org/
[20] Choose likely Data Journals of relevance: e.g. Nature Scientific Data, or search http://doaj.org
[21] NB: embargoes can be placed to allow project to publish/exploit first, but consortium should aim for full release by end of contract, or justify why access needs to be restricted (publications may not be viewed favourably at review).
[22] Choose a structured archive with minimum metadata requirements to allow maximum re-use e.g. GitHub, SourceForge, etc.
[23] EC FP7 and Horizon2020 funded e-Infrastructure https://www.openaire.eu/ in support of EC Digital Agenda
[24] EC Open Data Pilot http://europa.eu/rapid/press-release_IP-13-1257_en.htm
[25] FP7 FOSTER, Facilitating Open Science in European Research (www.fosteropenscience.eu)

www.fosteropenscience.eu www.openaire.eu 15

How to "write" #OpenScience In your proposal ?

No need to re-invent the wheel.

Source: Winning Horizon 2020 with Open Science, 10.5281/zenodo.12247


Bored yet?

Does #OpenScience matter at proposal evaluation?

Based on: Winning Horizon 2020 with Open Science, http://dx.doi.org/10.5281/zenodo.12247

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Excellence

"Weakness: Involvement of non-academic beneficiaries is limited"

Impact

"Weakness: highly focused on academic activities, and lacks an advanced communication strategy"

"data accessibility is unclear!"

Implementation

"Weakness: limited exposure to non-academic partners & infrastructures"

"data storage & access not considered"

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Source: Horizon2020, Marie Curie ETN Evaluation Process, 2014

Impact:

- *"Strengths: extensive dissemination of data to the scientific community (open access, databases)"*
- *"outreach activities to a broad audience"*
- *"research software is freely available"*

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Source: Horizon2020,
Marie Curie ETN Evaluation Process, Spring 2015

Does #OpenScience contribute to economic Grow?

Based on: Winning Horizon 2020 with Open Science, http://dx.doi.org/10.5281/zenodo.12247

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More open data for more users…

40+

Number of countries with government open data platforms*

90,000+

Data sets on data.gov (US site)*

Source: McKinsey Global Institute 2013. Open data: Unlocking innovation and performance with liquid information | McKinsey & Company.

... can lead to more value

$3 trillion

Approximate potential annual value enabled by open data in seven "domains"

Does #OpenScience contribute to Economic Growth?

- *19% of the processes developed would have been delayed or abandoned without access to research*
- *a 2.2 years delay would cost around EUR 5 million per firm in lost sales*

Source: Houghton, J., Swan, A. & Brown, S. Access to research and technical information in Denmark. (2011) http://eprints.soton.ac.uk/272603

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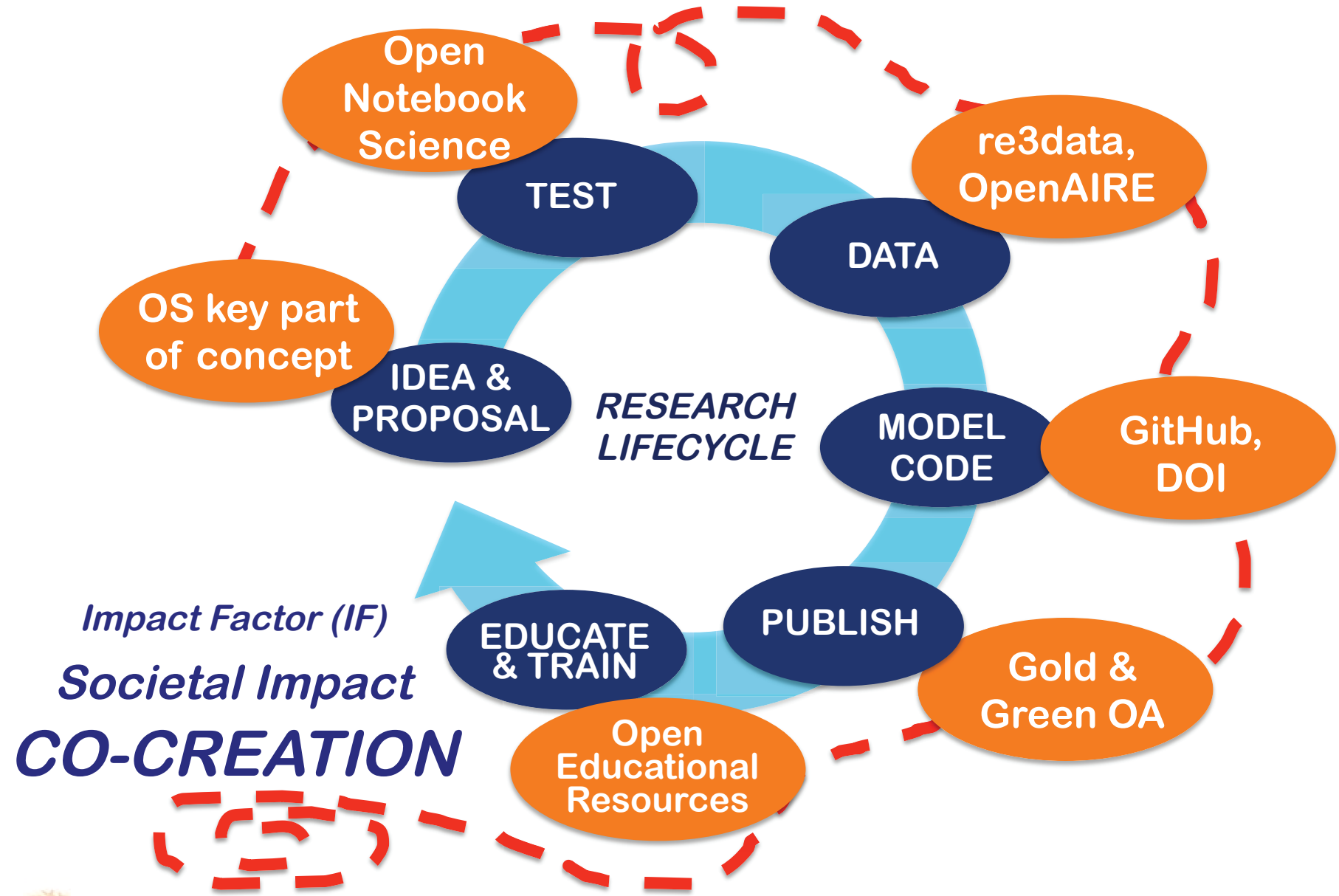

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"Research Cycle" adapted from Tenopir et al., (2011) doi:10.1371/journal.pone.0021101
http://www.plosone.org/article/info:doi/10.1371/journal.pone.0021101

Good Luck with Horizon 2020!

Join the Open Science experiment at www.fosteropenscience.eu

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# fosteropenscience

ivgr @ aqua.dtu.dk

slideshare.net/ivogrigorov/winning-proposals-with-open-science